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ABSTRACT

While the cognitive-style approach to individualized instruction is no panacea for all educational ills, it holds high promise as a means of helping faculty and students to develop effective learning environments. In utilizing this approach, several factors must be considered. First, a clear distinction should be made between cognitive style and ability or achievement. Cognitive style is a matter of behavior and preference which cannot be measured quantitatively on a norm-referenced basis, as can ability or achievement. Second, while at least 30 models have been identified in the literature for the implementation of cognitive style approaches, they are all based on four precepts: individuals prefer to learn differently; individual learning styles are identifiable; institutions have a responsibility to consider cognitive style in instructional delivery; and students have a responsibility to structure their learning environment in accordance with their cognitive style. Fourth, an understanding of cognitive style theory is valuable in both academic and non-academic settings and is useful for all learners. Fifth, it is not always desirable or possible to match students' cognitive style with instructional styles. Finally, a recognition of his/her cognitive style can help the student make individual decisions about his/her approach to study and, thus, is useful even when alternative learning methods are not available. (JP)

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AN OVERVIEW OF COGNITIVE STYLE

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AN OVERVIEW OF COGNITIVE STYLE

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For the past decades, American Education has emphasized the value of *"individualized instruction."* In each instructional setting, regardless of age group, subject matter, student characteristics, or other variable, teachers have been encouraged to *"individualize"*. Numerous "materials" and "systems" have been developed. There is conclusive evidence to support the instructional value of some of these individualized programs; however, there is indisputable evidence that *"individualized instruction"* is not the answer to all the challenges of educating our students.

Bloom's "mastery learning theory" further frustrated professionals. He suggested that ninety percent of the learners who wanted to learn should master the material. The teachers need only understand the students' aptitude and ability and offer quality instruction while varying time requirements. What then was the discrepancy between theory and practice? Perhaps the unanswered question was:

HOW CAN WE DETERMINE WHICH OF THE STRATEGIES, TIME FRAMES, AND TEACHING ENVIRNOMENTS WILL BE EFFECTIVE FOR EACH STUDENT?

Until the above question could be answered, the objective of American Education to provide every person an equal opportunity to receive an education of high quality could not be realized.

While not the answer to all educational ills, Cognitive Style holds high promise of helping the educator and the student jointly determine the most effective environment for learning. Information about how the learner prefers to gain knowledge does offer hope that we may do a better job of helping students learn.

Cognitive Style is Different From Ability or Achievement

A clear distinction between Cognitive Style and ability or achievement is essential to an understanding of the concept. Often initially they are considered as similar or at least related. That misconception accounts for a large measure of the confusion surrounding Cognitive Style.

Cognitive Style addresses behavior and preference. Ability and achievement are both measured as levels or attainment. Cognitive Style is value free. There is no such thing as "good" or "bad" Cognitive Styles. Ability and achievement are described numerically frequently on a comparative or norm reference basis from 1 to 100 or as grade level equivalents--or as percentile ranks. Cognitive Style addresses an individual's preference in one area or lack of it in that area and encourages comparison of the individual with himself or herself in one or more areas--not with a norm or group. Cognitive Style is concerned with qualitative differences of the dimensions described rather than quantitative differences.

There are Many Cognitive Style Models Described in Research

At least thirty have been reported in the literature. Messick (1970, pp. 188-189) defines nine. Cross (1976) refers to those and others and gives a rather detailed description of the most widely researched and reported: Field Dependence versus Field Independence (pp. 111 - 133). The 1979 National Association of Secondary School Principals devoted an entire book (Student Learning Styles) to Cognitive or Learning Style referencing representative instruments in the appendix. Martha Maxwell (1979) devotes a chapter to Cognitive Styles and describes the Hill model in some detail. She reports on

the implementation at Mountain View College. Karen Nelson (1975) lists and describes the principal researcher of a number of models. By name, there are more than a score of Cognitive Style models. Published research is available on at least one-half that number.

Cognitive Style Implementation is Based on 4 Precepts

1. Individuals prefer to learn differently.

2. It is possible to determine (imperfectly) how individuals prefer to learn.

3. It is the responsibility of institutions and/or individuals who provide learning environments to consider the Cognitive Style of the learner (and of the instruction).

4. It is the student's responsibility to use provided Cognitive Style information to structure his or her own learning environment.

Cognitive Style is Appropriately Used in Many Settings and with Any Learner

Cognitive Style has immediate appeal to those responsible for training in academic or nonacademic instructional settings because it seeks to answer the questions relative to matching teaching behavior, learning modes and learners.

Awareness of Cognitive Style has obvious advantages both in an academic setting and in a non-academic learning setting. The value of Cognitive Style transcends learning settings to promote effective life-long learning habits in personal, business and educational pursuits.

Each individual interacting with the concept of Cognitive Style should benefit from the experience. Obviously, the need for Cognitive Style is most critical to those who have failed to benefit from the previous "traditional" learning settings. Cognitive Style is most valuable to minority students, students from low socio-economic

settings, and students with learning or physical disabilities. Their need is most obvious in an instructional setting. However, Cognitive Style is useful to all learners and all persons responsible for learning.

It is Not Always Desirable to Match Cognitive Style and Instruction

Another area of frequent misunderstanding surrounding Cognitive Style involves the desirability of matching learner and learning. If it were possible to always offer instruction in the manner "preferred" by the learner, to do so would be a great disservice: (of course, it would also be impossible!) A Cognitive Style program "takes into account" the Cognitive Style of learner, instructor and instruction to devise the most appropriate combination. When students have experienced considerable frustration in previous learning environments, or are encountering totally new and difficult material, or are developmental students, a concerted attempt should be made by instructors and students to match Cognitive Style of learner and learning. When students are reviewing already mastered information, are in accelerated programs, are extremely bright individuals or are anticipating moving into an academic or work environment where matching will be improbable, mismatching should be seriously considered by learner and instructor. "Mismatching" is as important a component of a Cognitive Style program as is "matching." Moreover, other factors need to be considered when planning instruction. Swimming must involve swimming even for the student preferring to "learn by reading". Financial, personnel and physical factors are practical constraints for selecting instruction. Cognitive Style is one factor to be considered when selecting instruction, but not necessarily the factor.

Cognitive Style is Valuable With or Without Alternative Instruction Available

Through Cognitive Style, a profile of the student's preferred learning style is derived. The instructor and the learner can then "jointly" select from available choices the most effective materials and settings for learning for *that student*.

Sometimes, alternate instruction is unavailable or impractical. When that situation exists, Cognitive Style is equally or possibly even more valuable for the student. Numerous opportunities exist for students to create their learning environment apart from the officially prepared one--they may elect to take notes or not to, to study with a peer or alone, to tape a lecture or meet individually with an instructor. Many students have not considered the relative merits of these options, if indeed they have considered the options. Students' recognition of Cognitive Style also enables an understanding of why they may be experiencing frustration, how to discuss differences without attaching value laden emotions to those differences, or how to plan their time and learning effort. One of the most interesting research projects substantiates the value of student Cognitive Style knowledge. In a study by Mary Josephine Fourier of Johnson County Community College students were divided into control and experimental groups. The experimental group was mapped with the Hill instrument and had their map interpreted. The control group had a non-cognitive style instrument administered and interpreted. There were no other variables. The groups were mixed in class and were not distinguishable by the instructors. The results were dramatic. "Results . . . showed that statistically significant . . .higher mean differences in academic achievement were obtained by the experimental group in all three replicas. The size of the absolute differences in percentage points

(6.77 to 8.19) was large when considering the size,. . . of the difference between one semester letter grade and the next."

Cognitive Style Implementation is Growing

A number of institutions in a variety of instructional settings have implemented a Cognitive Style program. There are in excess of 20 Cognitive Style models, and the implementation ranges from experimental programs with few subjects to instituion wide by involvement with thousands of subjects yearly. Cognitive Style programs are found in industry as a part of the training program and as a communication skill tool at the management level. Programs involve preschool children and adults at all age levels.

In a recent national survey conducted for the League for Innovation in the Community College the authors surveyed 54 member colleges of the League. The purpose of the project was to provide members with information on which of the League institutions were currently utilizing one or more cognitive style inventories or instruments, and to provide narrative description of the courses and programs utilizing Cognitive Style. The information gathered during the spring and summer of 1979 and compiled in the fall of 1979 indicated that 25 of the 54 institutions surveyed have ongoing Cognitive Style programs. In these 25 colleges 8 instruments or models are being used to determine Cognitive Style. The implementation in the League institutions ranged from use in a single class to campus-wide involvement using the midpoint of the report range it was determined that more than 7,000 students were assessed yearly to determine Cognitive Style.

Cognitive Style embraces a timely concept: Student and instructor are accountable for learning. This shared responsibility is more likely to result in success when the Cognitive Styles of the learner and the instructional mode are considered.

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